

based on continuing pilot tests in government and industry laboratories. Blanco Mariout seems to have more and better enzymes and proteins and gives a higher extract yield than Atlas. It tends to germinate faster than most of our other barleys. As a rice-like food substitute, it has a striking advantage over California Mariout in color, texture, and appearance. Being larger and softer, Blanco Mariout grains should roll better than California Mariout. Rolled barley is often preferred over ground barley for livestock feed use.

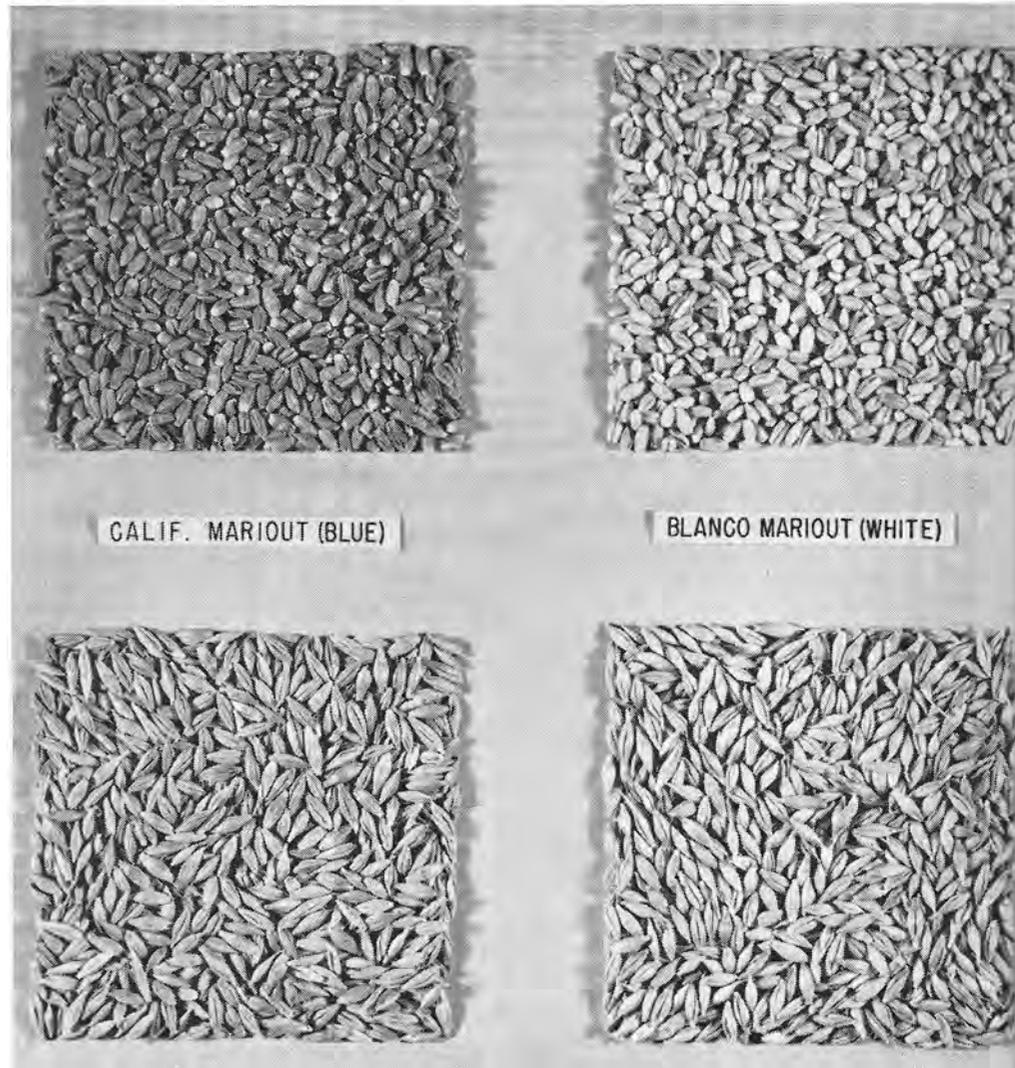
Blanco Mariout can reproduce from planting at any time of the year, but the highest production will generally come from December sowing. Like California Mariout, Blanco is especially well adapted for late spring planting as compared to other varieties. The special hazards from very early fall sowing are foliar diseases such as scald and mildew, yellow-dwarf virus, spring frost at heading, or excessive lodging.

Most of the 1961 crop of Blanco Mariout meeting certification standards will likely be replanted for the production of certified seed. Large quantities of certified seed for regular commercial planting will not be available until the summer of 1962.

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Samples of California Mariout barley, left, compared to the new variety Blanco Mariout

## Respiratory diseases

### IN CHICKENS

L. A. Page

Infectious coryza, a respiratory disease of chickens, is caused by the bacterium *Haemophilus gallinarum*. The disease has continuously plagued sections of the poultry industry in California for a number of years. Since prevention and control measures have met with relatively little success, new approaches have been made to the study of the disease. *Haemophilus* organisms associated with recent field cases of coryza and airsac disease have been isolated and characterized for their cultural aspects, biochemical activities, specific antibodies formed against them, and their virulence in causing disease in chickens, chicken embryos, and mice. Similar studies have been made on other microorganisms found associated

with *H. gallinarum* in diseased tissues, especially members of the genus *Pasteurella*. Whether the severe disease observed in field cases was caused by *H. gallinarum* alone or by a combination of agents is under investigation.

Combined field and laboratory investigations have produced the following results: 1—Unusually virulent strains of *H. gallinarum* have been isolated recently from coryza-affected chickens. Studies show that these strains differ in cultural, biochemical, and pathogenicity characteristics from previously described strains of the bacterium. 2—A detailed study of the gross and microscopic lesions caused by eight isolates of *H. gallinarum* shows that these organisms produce lower respiratory tract disease—airsacculitis—as well as tracheitis and coryza. 3—Significant differences in susceptibility to *Haemophilus*-caused airsacculitis were found among identical

groups of chickens separated only according to where they were raised—whether on a chicken ranch in northern California or in isolation at the School of Veterinary Medicine in Davis. Although both groups of birds were similar as to source, breed, age, diet, and management, the ranch-raised birds were demonstrated to be more susceptible to airsacculitis than the birds kept in isolation. Further investigation is in progress to determine the reason for these differences in susceptibility. 4—Methods for immunization of chickens against *Haemophilus*-caused disease are now being tested. Results obtained thus far indicate that single-shot immunization with a potent formalin-killed *Haemophilus* vaccine will protect chickens for limited periods of time against airsacculitis caused by *H. gallinarum*.

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